

國立台灣師範大學數學系教學大綱

課程名稱： 統計學(一) Statistics (I)

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一、 教學目標：

Statistics is the science of interpreting, understanding, and deducing information from data collections. We will emphasize the meaning of statistical results, and the mathematics used to perform statistical calculations. Our goal will be to cover much of chapters 5 to 8 in the text in the book. In particular, the notions of distributions of functions of one or more random variables, sampling distribution theory, estimation, significance tests, and the theory of statistical inference will be addressed.

二、 教材內容：

1. Review of Probability
2. Sampling distributions
3. Point estimation (1st Midterm exam 10.17)
4. Confidence Interval
5. Hypotheses testing (2nd Midterm exam)
6. Analysis of Variance
7. Simple linear Regression
8. Non-parameteric Methods:

Chi-square goodness-of-fit tests Contingency Tables Wilcoxon Tests  
(Final exam)

三、 實施方式： 課堂上課與作業演練

四、 參考書目：

- (a) Hogg, R. V. and Tanis, E. A. (2010) Probability and Statistical Inference, 8th ed. Prentice Hall. <http://www.pearsonhighered.com/educator/academic/product/0,3110,0321584759,00.html>  
台灣[http://www.hwatai.com.tw/serch\\_3.asp?ISBN=032163635X](http://www.hwatai.com.tw/serch_3.asp?ISBN=032163635X)
- (b) Rice, John A. (1995) Mathematical Statistics and Data Analysis, 2nd ed. Duxbury Press.

五、 計分方式： 三次考試(各30%), 課堂小考及助教時間 (10%)